



Determinants for Switch Over to Electric Two Wheelers in Pune City.

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ABSTRACT

The automobile sector plays a key role in both macroeconomic expansion and technological advancement. The Indian automobile industry has historically been a good indicator of how well the economy is doing. Due to a growing middle class and a large proportion of the youth population the two-wheeler segment dominates the market in terms of volume. There is a growing trend of shift from petrol fuel to electric fuel. This study explores the determinants for switchover from petrol to electric two-wheeler. This will help manufacturers to focus parameters that will speed the adoption

EV-Electric Vehicle, Two-wheeler,

1. Main text

To promote the sale of electric two and three wheelers, Rs 500 crore is being allocated to Faster Adoption & Manufacturing of Electric Vehicles (FAME), according to heavy industries minister Mahendra Nath Pandey. According to data from gov't's Vahan portal, electric two-wheeler makers saw sales at 81,608 units in January 2024, which is a 26% from a year ago, and 8% more month-on-month. The sale of electric two-wheeler was 81608 units in the month of January 2024 a 26% higher as compared to last year registering a growth of 8% more month on month as per data from Vahan portal of Government.

Objectives of the Study:

- i) To understand the factors considered important for switch over to E vehicles.
- ii) To know the requirements in terms of infrastructure style design options for consideration of E mobility options.
- iii) Identify the preferences and needs of the from electric two wheelers

Research Design:

Type of Research: Primary.

Method of Sampling: Judgemental Sampling.

Sampling Unit: An individual possessing petrol two-wheeler.

Sample Size:500

Area of Research: Pune city

Data Analysis and Interpretation:

The data was analysed using excel.

1) Age

Table 7.1: Age of Respondents

Sr No.	Particulars	No. of Responses	% of responses
1	18-30	235	47%
2	31-43	157	31%
3	44-65	108	22%
	Total	500	100%

Data Interpretation:

The table shows the largest group of respondents is the 18-30 age group, which makes up 47%, 31-43 age group makes up 31% 44-65 age group makes up 22% of respondents

2) Which parameter is most important while considering an Electric two-wheeler purchase?

Table 7.2: Parameters important for consideration of EV

Sr No.	Particulars	No. of Responses	% of responses
1	High Range(kms)	95	19%
2	Looks and Design	85	17%
3	Less Charging Time	75	15%
4	Build Quality	70	14%
5	More Service Centers	60	12%
6	Load Carrying Capacity	115	23%
	Total	500	100%

Data Interpretation:

The pie chart shows the results of a survey of 2-wheeler buyers on their expectations from an electric vehicle (EV). The most important factor for buyers is load carrying capacity, followed by high range, and Looks & Design.

3) Mention most preferred reason for choosing 2-wheeler EV over Petrol Vehicle?

Table 7.3 Reason for switchover to EV

Sr No.	Particulars	No. of Responses	% of responses
1	Environment Friendly	82	16%
2	High Fuel Cost of Petrol	93	19%
3	Smart Features	75	15%
4	Low Service Cost	68	14%
5	Easy to drive and quiet	55	11%
6	Convenience of charging at home	47	9%
7	They are future proof	44	9%
8	Tax and financial benefits	26	5%
9	More storage	10	2%
	Total	500	100%

Data Interpretation:

The table shows that there are many reasons why people consider buying an electric 2-wheeler EV over a petrol vehicle. The top 3 reasons include environmental friendliness, High Fuel cost of petrol & Smart Features.

4) Mention a strong reason for choosing Petrol Vehicle?

Table 7.4 Reason for preferring Petrol Vehicles.

Sr No.	Particulars	No. of Responses	% of Responses
1	Performance	95	19%
2	Build Quality	82	16%
3	Ease of repair	70	14%
4	Lack of Infrastructure Charging	65	13%
5	Reliability	50	10%
6	High Cost of EV	44	9%
7	Local infrastructure	40	8%
8	Resale Value	39	8%
9	Customization	15	3%
	Total	500	100%

Data Interpretation:

The table shows that there are several reasons why people might consider a 2-wheeler petrol vehicle over an electric vehicle. The top reasons include performance, build quality and ease of repair.

5) Which type of EV wheeler you will buy?

Table 7.11: Preference for Low/High Speed Vehicle.

Sr. no.	Earnings	Rating	% of Responses
1	Low Speed Vehicle	242	48%
2	High Speed Vehicle	258	52%
	Total	500	100%

Data Interpretation:

The table shows a inclination to high speed vehicle over low speed vehicle.

6) What is the most liked colour for Low-Speed Vehicles?

Table 7.5: Preferred Colour for Low Speed Vehicle.

Sr No.	Particulars	No. of Responses	% of Responses
1	Magic Blue	101	20%
2	Grey	99	20%
3	Burgundy Red	92	18%
4	White	49	10%
5	Vibrant Orange	75	15%
6	Harvest Green	44	9%
7	Others	40	8%
	Total	500	100%

Data Interpretation:

The table shows most popular colour is Magic Blue, followed by Grey and Burgundy Red. White, Vibrant Orange, and Harvest Green are the least popular colours. The graph shows that there is a clear preference for neutral colours when it comes to 2W EV Colour preferences.

7) What is the Most Liked colour as per Customers Survey for High-Speed Vehicles?

Table 7.6: Colour Preference for High-Speed Vehicles

Sr No.	Particulars	No. of Responses	% of Responses
1	Magic Blue	94	19%
2	Grey	83	17%
3	Burgundy Red	125	25%
4	White	62	12%
5	Vibrant Orange	57	11%
6	Harvest Green	40	8%
7	Others	39	8%
	Total	500	100%

Data Interpretation:

Above shows the bar graph of the number of different colours. The most popular colour is Link (Dark Blue), Aurora White, followed by Vitality (Purple) & Modish Blue. The least popular colours are Red and Digital Power (Blue- Black)

8) How much cost savings monthly, are you looking from electric two-wheeler?

Table 7.7: Cost Savings EV 2-Wheeler

Sr No.	Particulars	No. of Responses	% of Responses
16	100-500	152	30.4%
2	500-1000	144	28.8%
3	1000-1500	111	22.2%
4	More than 1500	93	18.6%
	Total	500	100%

Data Interpretation:

Almost 59% of respondents are looking for a saving in the range of 100-1000 ,22% look up to savings of 1500 and 19% expect more than Rs 1500 savings

9) Avg. Price of EV 2-Wheeler you are ready to pay.

Table 7.8: Prefer. Price of EV 2-Wheeler

Sr . No.	Particulars	No. of Responses	% of Responses
1	60,000-80,000	167	33.4%
2	80,000-1,00,000	118	23.6%
3	1,00,000-1,20,000	92	18.4%
4	1,20,000-1,40,000	73	14.4%
5	1,40,000-1,60,000	50	10%
	Total	500	100%

Data Interpretation:

33% of respondents are ready to pay up to 80,000. Only 10% are ready to pay up to 1,60,000.

10) Which type of charging stations you will prefer?

Table 7.9: Preferences for Charging Stations

Sr No.	Particulars	No. of Responses	% of Responses
1	Charging fuel stations	346	69%
2	In home Charge System	154	31%
	Total	500	100%

Data Interpretation:

69% of respondents want charging fuel stations while 31% would prefer in home charging station.

11) What is your preference for battery type?

Table 7.10: Battery Type

Sr No.	Particulars	No. of Responses	% of Responses
1	Removable Battery	311	62%
2	Non-Removable Battery	189	38%
	Total	500	100%

Data Interpretation:

62% of respondents prefer removable battery while 38% prefer nonremovable battery

Conclusion:

The study provides certain insights on the expectations of existing petrol two-wheeler consumers, regarding the parameters they will consider for switch to electric two wheelers. The determinants include load carrying capacity (Durability), high range(mileage), environmental friendliness, high cost of petrol and ease of repair. The infrastructure preferred is charging fuel stations and removable battery. The price range most preferred is Rs 60,000 to 80,000 and consumers expect cost savings of Rs 1000 per month. The determinants will help electric two-wheeler manufacturers to understand the requirements necessary for switchover to electric and increase customer base while ensuring environmental sustainability

References:

https://economictimes.indiatimes.com/industry/renewables/new-scheme-announced-to-push-sale-of-electric-two-wheelers-three-wheelers-in-india/articleshow/108464976.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst